**CELL AND MOLECULAR BIOLOGY - MICROBIOLOGY**  
*College of the Environment & Life Sciences (CELS)*

**Effective Fall 2012**

| Department: | Cell and Molecular Biology, 874-2201, http://www.uri.cels/cmb |
| UC Advisor: | Bethany Jenkins, bjenkins@uri.edu, 874-7551 |
| Credits: | 120 |

**The Major Track:** Microbiology is an exciting area with challenging frontiers that include genetic engineering, cancer research, cellular mechanisms of infection, basic research in cell and molecular biology, and microbial ecology. Students selecting to major in this program today apply new technical approaches such as gene cloning, electron microscopy, and computer technology, to bacteria, viruses, algae, protozoa, fungi, and to animal and plant cells.

**Career Options:** A BS in Microbiology prepares a person for working at the bench in a number of areas, including: some hospital laboratories, the federal government (EPA, FDA, USDA) and industry. It is also an excellent basic foundation for graduate school and for professional schools, like dental school, medical school, veterinary school and podiatry school.

**Transfer out of UC:** Must have completed at least 24 credits, minimum GPA of 2.00, and received permission from the UC major advisor.

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The following is an example of the typical course schedule for the first 4 semesters for a student majoring Microbiology. These are recommended course selections for CMB majors in University College; there will be variation based on course availability and schedule restraints. Some classes are not offered every semester. It is important to plan ahead and consult with your advisor to allow yourself time to enroll in the classes you wish to take.

<table>
<thead>
<tr>
<th>Semester I (Fall)</th>
<th>Semester II (Spring)</th>
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<tbody>
<tr>
<td>URI101 Freshman at URI</td>
<td>BIO102/104 Principles of Biology II</td>
</tr>
<tr>
<td>COM100 Communications Fund.</td>
<td>CHM112/114 Chemistry II, Lab</td>
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<tr>
<td>CHM101/102 Chemistry I, Lab</td>
<td>WRT104/105 or 106 Composition</td>
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<tr>
<td>BIO101/103 Principles of Biology I</td>
<td>MTH131 or MTH141 Calculus</td>
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<tr>
<td>MTH111 or MTH131 or MTH141</td>
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<tr>
<td>Total credits: 15-16</td>
<td>Total credits: 14-15</td>
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<tr>
<th>Semester III (Fall)</th>
<th>Semester IV (Spring)</th>
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<tbody>
<tr>
<td>MIC211 Introductory Microbiology</td>
<td>CHM228 Organic Chemistry II</td>
</tr>
<tr>
<td>General Ed. or Elective</td>
<td>BCH311 Introductory Biochemistry</td>
</tr>
<tr>
<td>CHM227 Organic Chemistry I</td>
<td>PHY112/204 Physics II</td>
</tr>
<tr>
<td>PHY111/203 Physics I</td>
<td>PHY186/274 Physics Lab II</td>
</tr>
<tr>
<td>PHY185/273 Physics Lab I</td>
<td>General Ed. (Cat. S, A, F or L)</td>
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<tr>
<td></td>
<td>Elective</td>
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<tr>
<td>Total credits: 15</td>
<td>Total credits: 16</td>
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<tr>
<th>Semester V (Fall)</th>
<th>Semester VI (Spring)</th>
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<tr>
<td>BCH352 General Genetics</td>
<td>MIC Elective(s)</td>
</tr>
<tr>
<td>MIC333 Immunology and Serology</td>
<td>General Ed. (Cat. S, A, F or L)</td>
</tr>
<tr>
<td>CHM226 Organic Chem Lab</td>
<td>General Ed. or Elective</td>
</tr>
<tr>
<td>General Ed. (Cat. S, A, F or L)</td>
<td>General Ed. (Cat. S, A, F or L)</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
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<tr>
<td>Total credits: 16</td>
<td>Total credits: 16</td>
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<tr>
<th>Semester VII (Fall)</th>
<th>Semester VIII (Spring)</th>
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<tbody>
<tr>
<td>MIC413 Advanced Microbiology I</td>
<td>MIC414 Advanced Microbiology II</td>
</tr>
<tr>
<td>MIC415 Advanced Microbiology Lab I</td>
<td>MIC416 Advanced Microbiology Lab II</td>
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</tbody>
</table>
| | *For more information about the major contact the CBM University College advisor listed above.*
MIC495 Microbio Seminar 1 General Ed. (Cat. S, A, F or L) 3
General Ed. (Cat. S, A, F or L) 3
MIC Elective 3 MIC Elective 3
Elective 3

*Elective Microbiology course can be chosen from the following:
  MIC190 Issues in Biotechnology  
  MIC432 Pathogenic Bacteriology  
  MIC450 Prac Tools for Molec Seq Anal  
  MIC491/492 Research in Microbiol  
  BIO327 Vertebrate Histology  
  BIO437 Fund Molec Biol
  MIC334 Virology  
  MIC435 Intro Biol and Genet of Cancer  
  MIC483 Diagnostic Microbiology  
  MIC576 Marine Microbiology  
  BIO341 Cell Biology

**General Education (38 credits)**: All Category MQ (Mathematical & Quantitative Reasoning) and N (Natural Sciences) General Education requirements (11 cr.) are satisfied by courses taken as part of the major. Thus, to satisfy URI’s General Education requirements, CMB students should take COM 100, WRT 104/105 or 106, 6 cr. in Category S (Social Sciences), and only 15 credits of General Education courses from Category A (Fine Arts & Literature), L (Letters), or F (Foreign Language/Culture). See the URI Course Catalog (also on the web at http://www.uri.edu/catalog/catalog.html/index.html) for a listing of all General Education courses.

**Introductory Concentration Course (4 credits):**
MIC211 Intro Microbiology

**Basic Sciences (44 credits) - 11 credits applicable to General Education:**
BIO 101/103 Principles of Biology I
BIO 102/104 Principles of Biology II
BIO 352 Genetics
CHM 101, 102 General Chemistry I, Lab
CHM 112, 114 General Chemistry II, Lab
CHM 226 Organic Chemistry Lab
CHM 227 Organic Chemistry I
CHM 228 Organic Chemistry II
MTH 111 or 132 or 142 Pre-calculus or Applied Calculus II or Intermediate Calculus with Analytic Geometry
MTH 131 or 141 Applied Calculus or Introductory Calculus with Analytic Geometry
PHY 111, 185 General Physics I, Lab
PHY 112, 186 General Physics II, Lab

**Concentration (26 credits):**
MIC 333 Immunology and Serology  
MIC413 Advanced Microbiology I  
MIC414 Advanced Microbiology II  
MIC415 Advanced Microbiology I, Lab  
MIC416 Advanced Microbiology II, Lab  
MIC Electives (12 credits)

**Free Electives (18 credits)**
You may take 18 credits of your choice.

*For more information about the major contact the CBM University College advisor listed above.*
CELL AND MOLECULAR BIOLOGY, 120 CREDITS

Microbiology Option
College of the Environment & Life Sciences (CELS)
Department of Cell & Molecular Biology

STUDENT__________________________     ADVISOR__________________________

120 credits required

Student Total__________

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ADVISING COMMENTS:

General Education (28 credits +11 Basic Sciences)
URI101 ___(1)

C: COM 100____(3),   CW: WRT _____(3)

MQ: (3 cr. from Basic Science Requirements)
N: (8 cr. from Basic Science Requirements)
S: _______ (3)    _______ (3)

(15 credits from L, A, and F)
L: _______    _______
A: _______    _______
F: _______    _______

Introductory Professional Courses (4 credits)
MIC 211* _____(4)
*MIC 211 is highly recommended but students may substitute it for MIC 201.

Basic Sciences (45 credits)
BCH 311____(3)

BIO 101/103____(4)  BIO 102/104____(4)
BIO 352_____ (4)

CHM 101____(3), 102____(1)

CHM 112____(3), 114____(1)

CHM 226 ____ (2), 227____ (3), 228____(3)

MTH 111____(3), or 132____(3), or 142____(3)
or STA 307/8 ____ (3)

MTH 131____(3) or MTH 141 ____ (3)

PHY 111____(3), 185____(1)

Concentration (26 credits)
MIC 333 _____(3)  MIC 413 ____ (3)

MIC 415 ____ (2)  MIC 414 ____ (3)

MIC 416 ____ (2)  MIC 495 ____ (1)

Select from the following courses to fulfill the reminder 12 credits needed.
MIC 190____(3)  MIC 334____ (3)

MIC 336____(3)  MIC 422____(3)

MIC 432____(3)  MIC435 ____ (3)

MIC450 ____ (3)  MIC 483____ (3)

MIC 576____(4)  BIO 327____ (3)

BIO 341____(3)  BIO 437____ (3)

MIC491/492 ___ (up to 6 credits)

Free Electives (17 credits)
Students may take courses of their choice.

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120 credits required

Student Total__________